Technical Manual

console. Controls for the baseboard heater and the air conditioner are located on the front of the units.

OPERATOR SEAT ADJUSTMENT

The operator seat was selected to give operators of all sizes the ability to position and adjust the seat to their preferred arrangement. Since the operator must sit for extended periods of time, it will be worthwhile to adjust the seat to a comfortable position. A comfortable operator is more productive, more efficient, and less abusive to the machine.

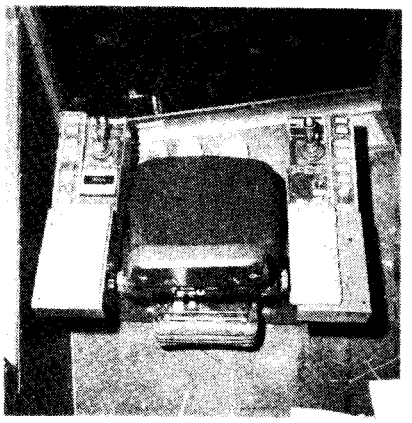

Figure 3

The operator seat is adjustable vertically 2.36 inches (60mm) in three levels. Fore and aft adjustment is 5.90 inches (150mm). The angle of the backrest can be adjusted from 0 to 35 degrees and the backrest can be extended for additional height. There is a lumbar adjustment for back curvature and vertical position. The seat cushion angle can be changed from 5 to 12 degrees. See Figure 3.

In addition to the above normal adjustments, there are two others which can be made for those operators who are of extreme build - very small or very large.

First, the entire seat/consoles assembly sits on an adjustable base allowing the assembly to be rotated 20° with respect to the seat centerline. Second, 2 inches (50.8mm) of adjustment has been provided in the consoles which allows each console to be moved away from or toward the center of the seat. These adjustment screws are located under the consoles.

RIGHT HAND CONSOLE

The right hand console consists of three panels which contain the following controls and switches:

All alarms, except the "Rope Limit," must be acknowledged by the operator before the alarm will reset. To acknowledge the alarm, the operator must push the "Alarm Reset" pushbutton located on the left control console. Once the reset pushbutton has been depressed, annunciated alarms will automatically reset when the alarm condition no longer exists. "Rope Limit" alarms will reset automatically without the need to acknowledge with the "Alarm Reset" pushbutton.

> NOTE: This is true of all Rope Limit situations except 2nd stage dynamic tightline shutdown limits. As explained in the limit procedures, the "Alarm Reset" function must be used.

All alarm test points, lamps, logic, and buzzer should be tested at the beginning of each shift. This is done by depressing and holding the "Alarm Test" pushbutton. The buzzer should sound and all lamps should be lit - steady glow. Release the "Alarm Test" pushbutton and depress the "Alarm Reset" pushbutton to reset all alarms. Note any lamps that may be burned-out and replace immediately. If lamps are in tact and all annunciator points are not functional, then call a maintenance electrician.

The following table summarizes the 24 alarms. The type of alarm, operator response required, and procedures for reset are given.

Note No. 8

1. Push the "Alarm Silence" pushbutton to silence the audible alarm.
2. Proceed to the MARION PROGRAMMABLE SYSTEM CABINET and perform the following: See Figure 21.

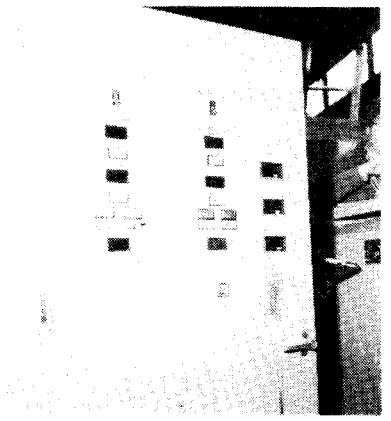

Figure 21

- Select Display Code "000" on the front panel and note the diagnostic code displayed.
- A relay fault is indicated by the diagnostic code, return to the operator's cab and attempt the following:
  (a) Push Control Start Pushbutton and hold one second, then release.
  (b) Push the Control Stop pushbutton.
  (c) Push the Alarm Reset pushbutton. If the alarm clears, resume normal operation.
  (d) If the alarm does not clear, a relay has failed and must be repaired by maintenance personnel.
- Any other code indicates sensor faults, and must be reset as follows:
  (a) At the MARION PROGRAMMABLE SYSTEM panel, place the system in the "TEST" mode by pushing the "TEST" pushbutton selector switch.
  (b) Wait two seconds and place the system in the "RUN" position by pushing the "RUN" pushbutton selector switch.
  (c) With display code "000" still selected, note the code displayed. If the code goes to "000," then the fault has reset and you may resume normal operation.
  (d) If the fault code does not reset (continues to read the same fault code) call maintenance personnel.
  (e) In some cases, more than one fault may be detected or a fault may be detected with the machine in a limit condition. In these cases, several reset attempts may be required to clear all faults. In the case where the machine is in a limit condition when a fault occurs, the display code will indicate the limit condition when the fault is reset rather than "000." The limit code will continue to be displayed until the limit condition has been removed.

13. Verify the voltmeter reads less than 50 volts and the frequency meter reads between 61 and 62 hertz.

14. Go to Electrical Paralleling Cabinet No. 2 and repeat Item No. 12.

15. Verify that Engine No. 1 is running at governed speed by noting the frequency meter and voltmeter readings. See Figure 30. They should indicate between 61 and 62 hertz and 600 volts respectively. The kilowatt meter and ammeter should read zero. If not, open the main circuit breaker and contact the maintenance department. See Note 2.
(NOTE 1) Do not attempt to operate the machine if either the ammeter or kilowatt meter reads anything other than zero at this point in the start-up.
(NOTE 2) If correct hertz and voltage are not indicated follow procedure for engine alternator parallel adjustment.

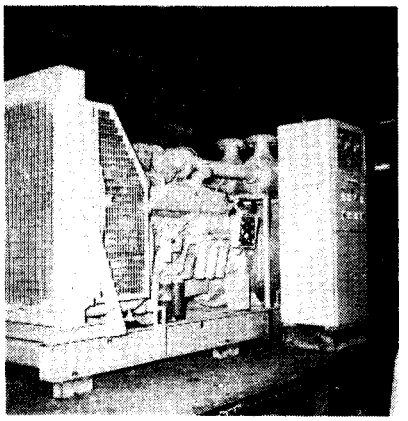

Figure 30

16. Proceed to Engine Room No. 2 at the right hand side of the machine and repeat Item No. 15.

With Engine-Alternator Sets paralleled proceed to the **AC High Voltage Cabinet** where loads may now be energized. See Figure 31.

The 600 volt AC bus at the high voltage cabinet is energized and loads may now be connected. The following procedure should be followed:

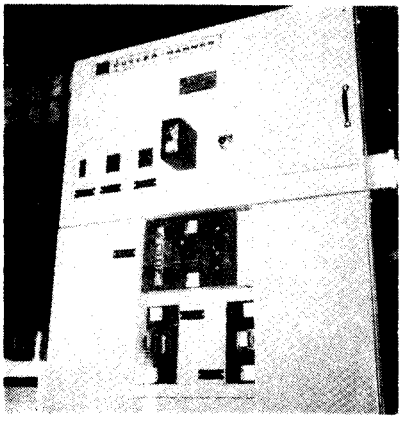

Figure 31

from the controller to the drive system is inhibited, and the master switch must be moved in the **Drag-in** direction to get out of the limit. As long as the bucket is positioned outside the payout limit, further payout will be prohibited. Procedure is as follows: (see Figure 62)

a) The "Alarm Silence" pushbutton should be depressed to silence the pulsing audible alarm. See Figure 58.
b) The drag clutch selector pushbutton must be in the set position before the system will allow motion. Place the drag clutch pushbutton in the set position (down).
c) Set the hoist and drag brakes and release the hoist clutch.
d) Depress and hold the "Drag Limit Bypass" pushbutton.
e) Push the "Control Start" pushbutton, picking up control excitation. When the green indicator illuminates, release the pushbutton.
f) Release the drag brake while still holding the "Drag Limit Bypass" pushbutton.
g) Now, slowly move the Hoist/Drag master switch in the **Drag-in** direction while still holding the "Drag Limit Bypass" pushbutton.

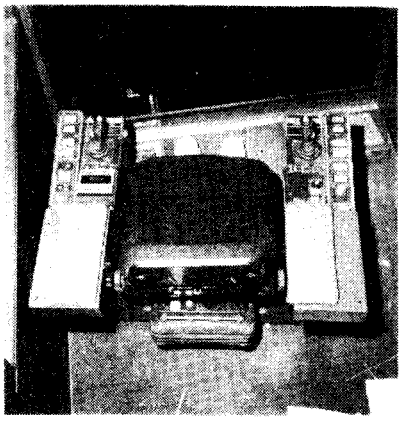

Figure 62

Note: Extreme caution must be exercised since motion will be possible in the payout direction also.

h) Carefully move the bucket/drag ropes in the drag-in direction until the red "Drag Limit Bypass" indicator and "Rope Limit" alarm turn off. This indicates the bucket is now inside the payout limit and full operational control has been restored.
i) Release the "Drag Limit Bypass" pushbutton and return to normal operation.

Note: During routine rope changes, it will be necessary to payout the bucket/drag ropes beyond the payout limit. This can be accomplished by

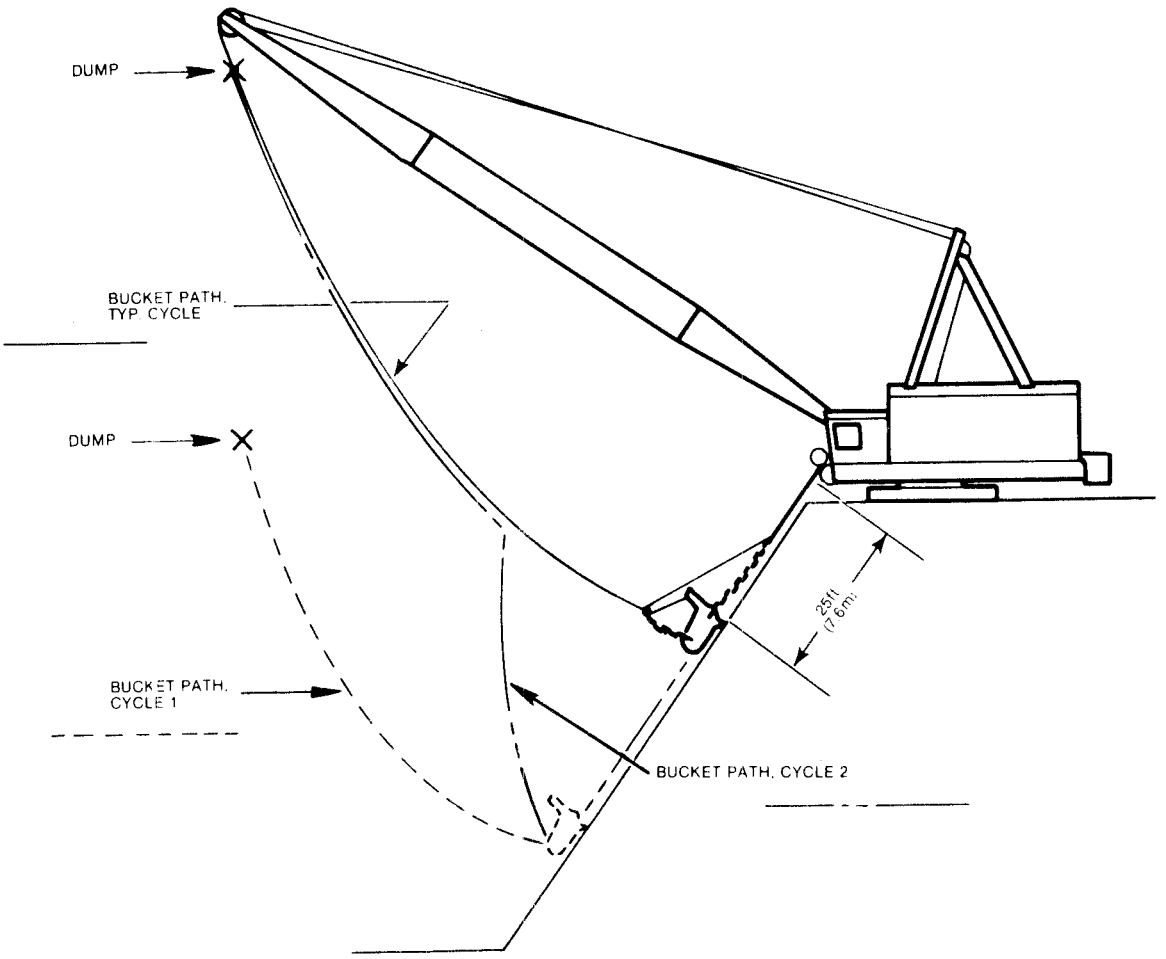
DUMP
BUCKET PATH,
TYP CYCLE
DUMP
BUCKET PATH,
CYCLE 1
BUCKET PATH, CYCLE 2
25ft
(7.6m)

Figure 72